

## How Information Literacy and Critical Thinking is Necessarily Tied to Writing Skill

Information today changes very fast, and we are bombarded with overwhelming amounts of it. One must be able think and work with fast-changing and enormous amounts of differently arranged (sometimes complimentary, sometimes conflicting) sets of data, facts and opinions. One must be able to integrate and evaluate from many different sources of knowledge and be able to find and use key information. Doing this requires recognizing key information and distinguishing it from unrelated information and other ancillary information.

These are the skills one needs to have:

- Weed through lots of "stuff," and be able to single out and recognize Pertinent Information.
- Evaluate and Use Information (Is it current? Is it useful? Is it well written? Is the so-called "expert" truly an expert? Is it biased? Is it well-rounded and complete? Does it really relate to my topic? Is a better source of information available to me?).
- Effectively cite the many Sources of Information from which one draws (Citation means an ability to efficiently return to and be able to point others to the specific place where every piece of information was obtained. Specific methods of citation are required at different ages and for different classes and subjects. They key words to know related to the topic of citation are: bibliography & plagiarize.)
- Be able to Recognize and Use different kinds of Information Sources appropriately.
- Present findings from various Information Sources into a coherent, logical, concise, and well-reasoned argument. Putting this presentation together into an interesting and creative project is key to effectively communicating with your intended audience.

All of these are High-Level Thinking Skills. Any skill must be repeatedly practiced to develop it and improve. Like any skill, the more one practices handling information, the better one gets. Proficiency with Information first requires efficient reading skill and good comprehension. Then, to demonstrate the skill with information, good writing ability is a must (developing ability with information and developing writing skills go hand-in-hand).

Information Literacy involves finding needed information and then putting that information to use. This requires putting reading, writing and thinking all together. One might think that his or her thought processes on a topic are clear and precise even while that thinking is, in reality, quite fuzzy. Writing, however, develops clear thinking. Information Literacy is like the capstone of Reading, Writing, and Thinking. Information Literacy enables the learner to demonstrate clear thinking and reasoning: the true measure of learning. Information Literacy is the ultimate measure of Depth of Knowledge. While many educators talk much about teaching "Thinking Skills," I believe this, by itself, is short-sighted. Writing has always been and remains the best way to improve deep thinking and to demonstrate one's ability to reason and think with clarity and with a critical eye. Likewise, revising what has been written is analogous to revising and sharpening ones thinking skills. Writing develops clarity of thought like no other subject, and writing sharpens thinking in every other subject. Working with sources of information gives the student a way to write and think about a range of subjects and relate diverse subjects to one another.

No matter how much we attempt to improve student engagement and critical thinking about a given subject (and we should), there is no denying the fact that in our schools today, students do not write enough nor do they revise the product of their writing often enough. It is no wonder so many adults write and think with lack of clarity; they have not practiced this skill often enough. This is because of the tyranny of "everything else" which has cut into student writing time in every subject, and it's because we are too involved in the false and unreachable goal of making all learning "relevant" for all students in every subject and at all times (real education reform would address the "everything else" which has crept into schools to draw them away from focusing time on their core mission). While I'm not against learning relevancy or student engagement, I think this universal and utopian goal has undermined students

working to improve themselves and produce a higher quality outcome in all areas (It's still the teacher's job to motivate students to want to learn -- even among those students who do not want to be there; this is how one can recognize a truly excellent teacher. They reach more students than most of us, and the real "all stars" reach those students who are seemingly beyond reach). Further, this unachievable and short sighted goal of relevancy in every class and at all times has contributed to the "blame the teacher mentality" which is epidemic and is at the heart of most so-called modern education reforms. No student will ever say that revising and rewriting often enough to really make the writing truly excellent and clearly focused is something that he or she finds "relevant" and "exciting." Instead, it takes a teacher or parent or other mentor to make a student redo the work until excellence is achieved (whether or not this particular student finds revision of the work to be "relevant"). Only after the fact will student see the rewards from this tedious and tiresome work. Some students will never see or understand the rewards of the diligence and tedium through which they must plod to achieve excellence and clarity. Nevertheless, they must be prodded to continue. Only a subset of these students will ever appreciate the benefits of enduring to the goal of excellence (and most of them will only appreciate this after the fact). Perhaps this level of critical thinking that involves writing and rewriting for true excellence and clarity of thought is not for all students. If, however, we want to produce genuine critical thinkers, some subset of the student population needs to engage more deeply and more regularly in writing, rewriting, rethinking and more rewriting, until finally some measure of revision begins to bring forth a well written and clearly focused exposition of thought (and even then, more and more writing and revision -- after dealing with criticism is what bring forth excellence). More tedium is the reworking of previously written material to make it clear and precise. If we want critical thinkers, we need to focus on writing and revising written work for clarity and excellence. We must do this across all subject areas.

The skill of clear and precise communication -- a required component of critical thinking -- requires continued practice. To produce critical thinkers, we must increase the expectations regarding the amount and quality of writing students must produce at every grade level before we consider any topic to be "mastered." There is no shortcut for spending more time writing. If we commit to more time engaging our students in writing, our students will, of necessity, become better critical thinkers. If, on the other hand, we focus only on critical thinking without developing skill at writing and communicating with clarity, we are fooling ourselves and no genuine improvement (or at best only marginal improvement) at critical thinking will occur. Students need to learn how to find information and how to use information. This is only done well by weeding through massive amounts of related material and learning to narrow and focus thinking on what information they have before them, what other information do they need, what kind of information is relevant to their topic, what they desire to say about their topic, and what the information (along with their other accumulated knowledge) is leading them to conclude. As one weeds through all of the available information, the student will recognize that some of this information is good, some of it is of mediocre quality, and some of it is either not of good quality or is possibly quite bad (bad information which is purposeful is called misinformation -- and it's quite prevalent today). Evaluating information for relevance, reliability, and quality is the salient skill students must to develop to survive and thrive in today's world of connectivity, fast-paced change, and information and data overload. Learning to differentiate between raw data and data which has been meaningfully compiled into cogent and clear information is a skill that proves thinking and learning has indeed occurred.

In addition to finding and using information, students need to learn how to present their findings to their audience. Presenting information: bringing it all together into a relevant and meaningful work product, involves taking raw data and arranging it into a meaningful and informative whole; a piece of work which tells the reader something. The ability to create a meaningful and interesting presentation should also be practiced, as often as we can find the time. Fine tuning information for the intended audience indicates the student is not only a critical thinker, but he or she is ready for the fast-changing "world not yet imagined."

Don't believe everything you read on the Internet (for that matter, don't uncritically believe everything you read in any book, see in a documentary or other film, hear on the radio or are told by an "expert."). Critical thinkers employ skepticism along with their desire to learn. Genuine critical thinkers are what we need for our future, but they can be a challenge to teach and when they are grown, they can be a challenging partner with which to work. Nevertheless, our society needs these critical thinkers to challenge the majority thinkers and those who uncritically believe what is apparent, but not necessarily true. The hero of the fairy tale was the boy who cried, "The Emperor has no clothes." Few of us are truly so brave.